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# COMPUTERNEWS

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Janet Campbell, Editor

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## UTCC: 1975/1976

Over the past year there hasn´t been a significant amount of new developmental activity for the S/370-165-II and S/360-65 services at UTCC. Class C and APL/SV services were added to the S/370-165-II. More disk storage was added to both the S/370-165-II and S/360-65 machines to satisfy the increasing demand for online storage. More low speed and high speed teleprocessing ports were added to the S/370-165-II.

A large part of UTCC´s efforts were directed to enhancing and upgrading the S/370-155-II computing services used by the University´s administrative departments. Most of these S/370-155-II development tasks have been, or are in the process of being completed and will allow the Computer Centre to expand its services on the S/370-165-II and S/360-65.

UTCC is now in the process of increasing the main storage on the S/370-165-II from three megabytes to four megabytes in a co-operative developmental project with Advanced Memory Systems. As delivered by IBM, the S/370-165-II is limited to a maximum of three megabytes of main storage. It is expected that the fourth megabyte will be operational sometime in June, 1976 if the developmental work continues to proceed on schedule. Over the past year UTCC has tested the feasibility of "speeding-up" the S/370-165-II CPU by reducing the time required to fetch data from main storage. This is achieved by taking advantage of the faster memory cycle time of the AMS monolithic main storage which now runs at the IBM core storage speeds. Target date for the implementation of the processor speed-up feature is the end of the summer,1976.

The increased capacity of main storage will be used for the General Purpose Job Stream. Class B turnaround, particularly the priority 8 and 6 service levels should improve as a result of alleviating the GPJS memory constraints.

Some of our users feel there is a need for a responsive, lower cost, high capacity conversational remote job entry system at UTCC. Currently, UTCC has three systems that provide low speed remote job entry capabilities: ATS, APLSV, and TSO. All three systems have some limitations either in response time, function, cost, or capacity in providing a remote job entry facility. The WYLBUR conversational text editor and remote job entry system appears to include the features lacking in the other systems. WYLBUR was developed in 1968 at Stanford University and has since gained wide acceptance at many university and commercial installations. Other installations equal in size to UTCC report that they support 60 to 80 terminals with better than 2 second response for 98% of terminal interactions. UTCC is evaluating the feasibility of installing WYLBUR at the University of Toronto and has tentatively scheduled it for installation on the S/370-165-II before January 1977.

During the summer of 1976, the Computer Centre will be upgrading the heavily used HSJS language processors to their latest versions. UTCC will also be implementing an access control system for the High Speed Job Stream which should reduce contention for the HSJS facility by non-university users and provide a mechanism for the allocation of HSJS resources among university users should it become necessary in the future.

During the fall of 1976, a major redesign of the online dataset management and accounting system will be investigated. The online dataset management system has become cumbersome and inefficient with the growth in number of online datasets and the different number of subsystems such as TSO and APLSV that it now must support. Other aspects of dataset management such as security and access priviledges will be addressed in the redesign.

A second major project to be initiated this fall will be the redesign of the S/370 Services accounting system. Currently, the

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## UTCC: 1975/1976 Cont'd

accounting system suffers from the inflexibility and inconsistencies that come with old age.

The implementation of a virtual storage operating system for the S/370-165-II will not take place before the Summer of 1977. Thorough reevaluation of virtual storage system performance, accountability, and upward compatibility will be necessary since the Computer Centre's load, software, and hardware configuration have changed. UTCC is accutely aware of the problems which must be overcome before VS is scheduled for re-installation.

Anyone having input for any of the above projects or suggestions for other projects that they feel will improve the Centre's services, please contact Rein Mikkor (978-5058) or Stan Yagi (978-7331).

Rein Mikkor

## UTCC CALENDAR DISCONTINUED

We regret to announce that the UTCC memo calendar feature of COMPUTERNEWS has been discontinued. The calendar was originally intended to provide subscribers with a convenient reference summary of the upcoming events and activities of interest to the UTCC user community. The success of the calendar was largely dependent upon subscriber feedback in the form of prior notice to the editorial staff re seminars, conferences, computer presentations, etc. Unfortunately, the current lack of input to the calendar does not justify the expense of producing it each month.

Subscribers who wish to see the memo calendar reinstated as a regular feature of COMPUTERNEWS or who have other suggestions regarding the format or content of COMPUTERNEWS are invited to contact any member of the UTCC Publications Group in the Sandford Fleming Building, room SF137, phone 978-4034.

Janet Campbell

## GPJS JOB STATEMENT AND SPEAKEASY REFERENCE CARDS NOW AVAILABLE

Two new reference cards are now available to UTCC users. The GPJS Job Statement Reference Card gives a description of the job statement components needed to prepare a job card and provides samples of job cards for Class A and Class B jobs. The SPEAKEASY Reference Card provides a library of operations available through SPEAKEASY as well as the basic information needed to get started with this user-oriented language.

Both brochures are available in the Information Office, SF128 or from the Computing Co-ordinators.

Margo Harvie

## USERBOOK KWIC INDEX

In the last issue of COMPUTERNEWS, UTCC announced that copies of a Keyword-In-Context Index to Section 3 of USERBOOK were available at remote terminal locations. Users wishing to obtain their own copies may be interested in the following procedure but they should note that the job requires a tape mount and prints about twelve thousand lines.

The JCL required is as follows:

```
// sacn,sacp,50,150,,ffff,,,60),'UBOOK INDX'
// EXEC UBOOKNDX
/*SETUP UNIT=3400-5
//
```

The '150' in the job card is required due to the number of lines printed. 'sacn' and 'sacp' should be replaced by the appropriate S/370 Service Access Code and password. For 'ffff' substitute forms for wide paper and upper-and-lower-case print train at the terminal at which the output will be printed. Wide paper must be used because the index is formatted for about 130 print positions. If printing at 8 lines per inch on 11 inch <u>deep</u> paper, change the '60' in job card above to a more appropriate figure.

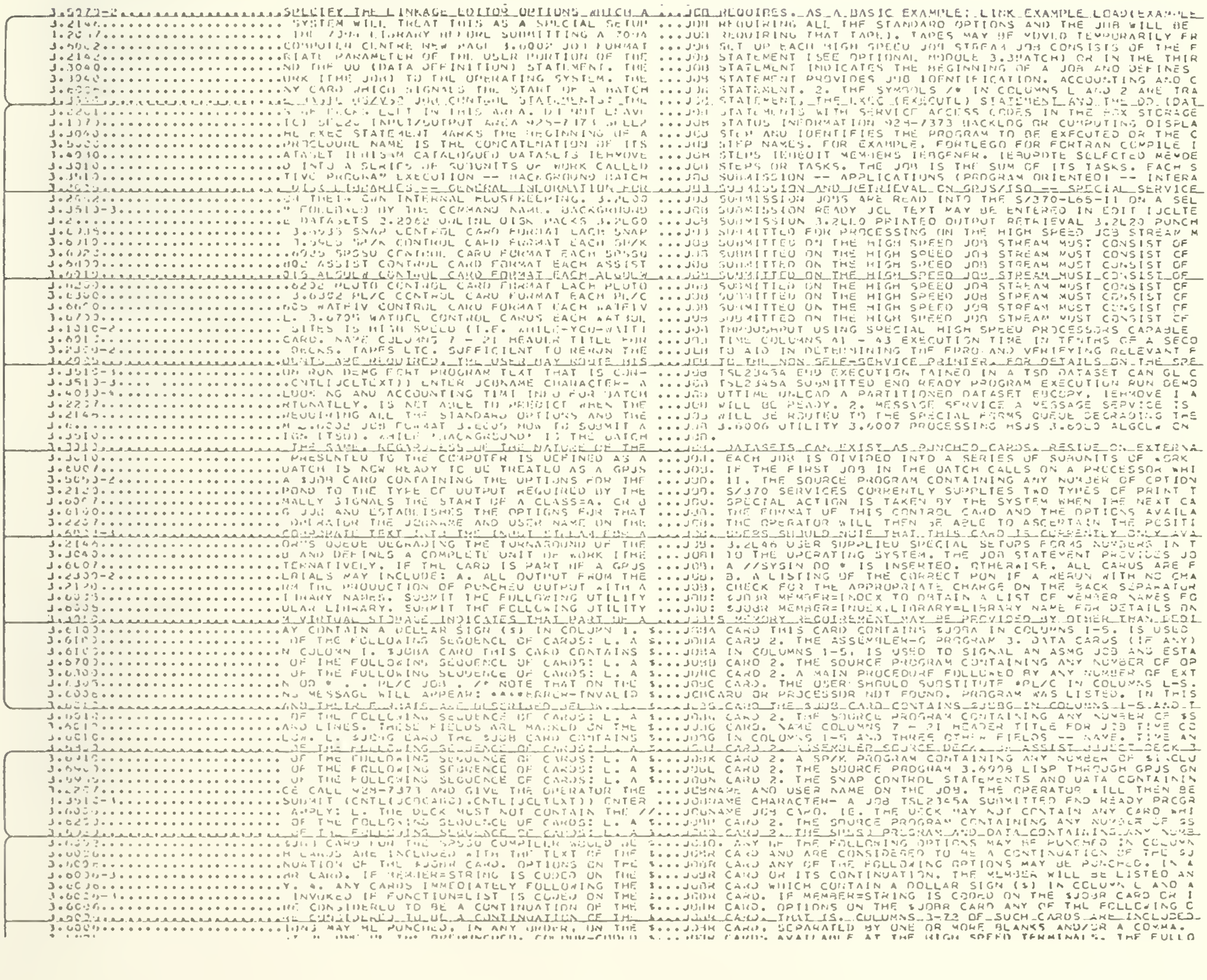
Cont'd...

## KWIC Index Cont'd

Each line of the index consists of the 'keyword' being indexed surrounded by its 'context' (the sentence in which it appears). The sentence is truncated to a fixed number of letters on either side and therefore some words may be truncated on the right margin. The keywords are listed in a column down the centre of the page. The left-hand column is the page number of USERBOOK in which the sentence appears. A sample of the KWIC Index appears below.

Users with problems or suggestions regarding the KWIC Index should contact Ian Darwin at 978-7318.

Ian Darwin



## THE 7TH ONTARIO UNIVERSITIES COMPUTING CONFERENCE

The 7th Ontario Universities Computing Conference will take place at the University of Waterloo from June 2 - 4, 1976. The theme of the conference will be "Applications and Objectives" and the conference itself will include presentations, discussions and special-interest sessions addressing this theme in terms of the impact of changing conditions and pressures on the applications of computing to meet the objectives of the academic institution. The Conference Chairman is Paul H. Dirksen of the University of Waterloo.

## TEKTRONIX APL GRAPH-II

APL GRAPH-II is a set of seven APL workspaces written by TEKTRONIX INC. to provide a high level command language for APL interactive graphics on the TEKTRONIX Model 4013 and 4015 terminals.

The following APL GRAPH-II workspaces are now available from the UTCC APL Public Library System:

| APL GRAPH-II WORKSPACE | TERMINAL TYPE |
|---|---|
| 20APLGRAPH2 | 4013, 4015 |
| 20 MINI | 4013, 4015 |
| 20 EGM | 4015 only |
| 20 EXAMPLES | 4013, 4015 |
| 20 ARBOUT | 4013, 4015 |
| 20 TEK2741<br>20 MINI2741 | only for TEKTRONIX 4013 and 4015 terminals equipped with 2741 type hardware interface |

The APL GRAPH-II workspaces are on both APL systems, SHARP APL on the S/360-65 and APLSV on the S/370-165-II. (Users should refer to Section 4 of USERBOOK for an introduction to APL).

The following documentation for this package is available from TEKTRONIX INC. and may be ordered through the Information Office, SF128:

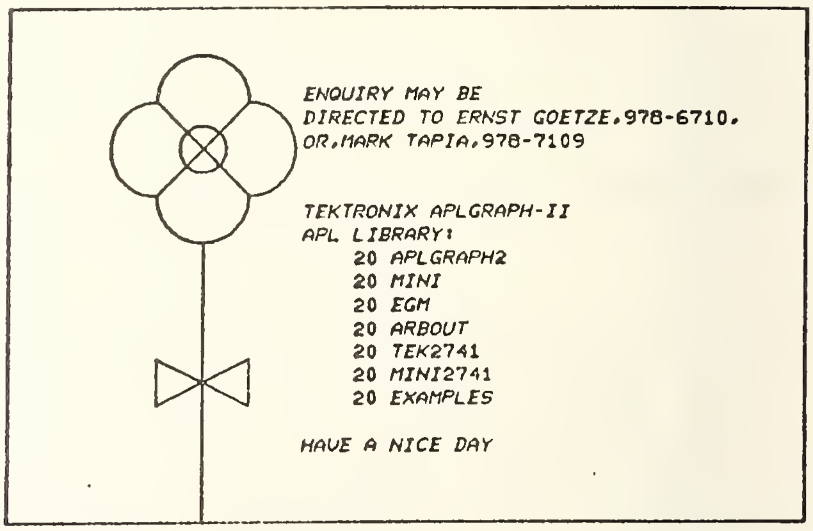
PLOT-10, APL GRAPH-II USER´S MANUAL (#062-1617-00)

PLOT-10, APL GRAPH-II SYSTEM MANUAL (#070-1783-00)

Both of these manuals are worth having, although the User´s Manual should be enough to get the user started.

The APL GRAPH-II package contains an excellent plot function, solid and dashed lines, automatic scaling and rotation, buffered and direct output and the ability to "draw" freehand if the user is dextrous enough to manipulate the cross-hair cursor around the screen with a pair of thumb wheels at the right-hand side of the terminal. The example below was done under function control on the TEKTRONIX Model 4013 with hard copy unit maintained by UTCC at CRF.

Ernst Goetze



```
ENQUIRY MAY BE
DIRECTED TO ERNST GOETZE,978-6710,
OR,MARK TAPIA,978-7109


TEKTRONIX APLGRAPH-II
APL LIBRARY:
     20 APLGRAPH2
     20 MINI
     20 EGM
     20 ARBOUT
     20 TEK2741
     20 MINI2741
     20 EXAMPLES

HAVE A NICE DAY
```

The following article is a reprint, with minor modifications, of an article written by Robin Russell of UBC´s Computing Centre

## EXCHANGING MAGNETIC TAPES WITH OTHER INSTALLATIONS

Sooner or later, just about everyone encounters the problems that accompany the exchange of data with another computer installation. Magnetic tape, which is light and compact and thus easily mailed or carried, is currently the most convenient and reliable medium for exchanging machine readable data between computing installations. However, there are still several things to remember when transporting data on magnetic tape.

### Backup

Accidents can happen during transportation. Always have a backup copy of the information on the tape kept in a safe place.

### Mailing Magnetic Tape

When mailed tapes are properly packaged, there is little chance of them being damaged. Ideally you should observe the following guidelines when packaging a tape for shipment:

a. The tape reel should be sealed in a tape container.

b. The external container (mailing package) should allow for a clearance of 4-5 centimeters around the tape reel.

c. Wood, paper, plastic, or some other suitable material may be used to fill in the spaces around the tape reel. This material will serve to pad the tape from mechanical shock.

Alternatively, you can mail a magnetic tape in one of the commercially available padded envelopes. These envelopes work most, but not all, of the time. However, when they don´t work, the results are usually disastrous; for example, the tape reel can be broken, and the tape unwound and crushed.

### Carrying Magnetic Tape onto a Plane

A common concern when transporting magnetic tapes is whether the metal detector devices currently in use at most airports will damage the contents of a tape. The most recent information from IBM indicates that metal detector equipment on the North American continent will not alter the data recorded on a tape. However, to quote IBM, ´There is an unconfirmed rumour that a few isolated airports in Europe and Japan employ an ´active´ device, but we have no factual information as to their abilities to alter or destroy magnetic media.´ Apparently, you should have no difficulties when passing tape through metal detectors.

### Specific Computer Considerations

Although magnetic tape is a convenient mode of data transportation, severe problems can result if insufficient information about the receiving installation is acquired before recording the data on tape.

Whenever you´re comtemplating sending data on magnetic tape to another computing installation, you should obtain information about certain magnetic tape hardware considerations at the other installation. Similarly, when receiving magnetic tapes from another computer environment, you should obtain the same information. Specifically, what interests you is:

a. the number of tracks - at UTCC we handle both 7- and 9-track tapes.

b. the density - at UTCC we handle the 7-track densities (200, 556 and 800 BPI), and the 9-track densities (800, 1600 and 6250 BPI).

c. the character set code - at UTCC we handle the 7-track recording codes, BCD binary coded decimal code, and EBCDIC - extended binary coded decimal interchange code (the latter through the use of the hardware data translator or data converter). The 9-track

Cont´d...

recording code we use is EBCDIC. All other recording codes will require a conversion program to be written before the tape can be appropriately read or written.

d. the parity - at UTCC, 7-track tapes may be handled when written in even or odd parity; 9-track tapes are written and may be read only in odd parity.

Other pertinent information about the structure of a tape should also be transmitted when a tape is exchanged with another installation:

- the number of files on the tape
- whether the tape is labelled or unlabelled. If it is labelled, the labelling technique should be described.
- blocking information including blocking format, the block size, and the logical record length.

## PERSONNEL CHANGES

This month the Computer Centre bids farewell to Laurie Macdonald, Bob Radcliffe, Sue McCaffrey, Shirley Seto, Helen Kan and San Ok Yoon. Laurie has left her secretarial position with Operations to enter the world of Radio and Television and Beverley Martin is transferring from I/O at the Sandford Fleming Terminal to fill the positon left vacant by Laurie. Bob Radcliffe has moved to a position with Canada Permanent Trust. Shirley, Helen and San Ok were keypunchers at 215 Huron Street and are leaving Information Systems to go their separate ways. Sue McCaffrey will be leaving UTCC to work at the Arts and Science Faculty Office. Best wishes are extended to all.

New this month is Ward Beattie who has come on full-time staff to work for Rein Mikkor as a Systems Programmer.

June Bridges

## CONGRATULATIONS!

Our congratulations to Grace Belanger of the UTCC Administration Office. On May 2nd, Grace celebrated her 10th anniversary as an employee at UTCC.

Our thanks to you Grace for all your help in the past and we look forward to working with you for another ten years!

## RECENT ACQUISITIONS IN THE DEPARTMENT OF COMPUTER SCIENCE LIBRARY

Berztiss, A.T.
Data Structures: Theory and Practice, 2nd edition
New York, Academic Press, 1975

Cole, Peter and Morgan, J.L., editors
Syntax and Semantics
Volume 3: Speech Acts

Ginsburg, Seymour
Algebraic and Automata-theoretic Properties of Formal Languages
Amsterdam, North-Holland, 1975

Newborn, Monroe
Computer Chess
New York, Academic Press, 1975

Pizer, Stephen Murray
Numerical Computing and Mathematical Analysis
Chicago, Science Research Assoc., 1975

## CHANGE TO ONLINE GPJS ACCOUNTING

As announced in HOTNEWS, a change has been made to the method of accounting on the General Purpose Job Stream concurrent with the installation of a HASP modification. As a result of the change, the S/370 Service Access Code usage balance is decremented by the cost of each GPJS job at the time the job is purged from the system. The account balance message appearing on the trailer page of the job output now reflects the actual account balance at the time the job is read. Therefore, the account balance includes all charges except those accrued by the current job. Accounts without overdraft privileges will be flagged when the balance goes negative and subsequent jobs will be flushed with an access code limit exceeded message.

John Chapman

## ATTENTION MARK IV USERS

As previously announced in HOTNEWS, MARK IV has been upgraded to Release 5.0. Documentation for this release is available at the Information Office, SF128. This change should be transparent to all MARK IV users. However, any problems resulting from this upgrade should be directed to the MARK IV Co-ordinator, Jerry Novak at 978-2189.

Herb Kugel

## ONLINE DISK DATASETS TO BE MOVED

In order to consolidate fragmented online disk space, UTCC will be moving user datasets on the online disk volumes, starting June 21, 1976. The names of the packs to be affected will be announced in HOTNEWS and in the TSO BROADCAST message one day in advance of the move. Users who feel that their data should not be moved are invited to discuss their requirements with a member of the Assurance Group in SF104, 978-6680.

UTCC wishes to remind users that referencing datasets by specific volume serial is not supported and therefore no credit requests can be honoured for jobs that fail after a dataset has been moved.

Michael Wagner

## COBOL LIBRARIES RENAMED

Effective on or about June 28, 1976, the COBOL Compiler and subroutine libraries with the prefix ´IC´ will be renamed to have the new prefix ´SYS2´. The following table shows the corresponding old and new library names.

| Old Libraries | New Libraries |
|---|---|
| IC.ANSI3.COBOL | SYS2.ANSI3.COBOL |
| IC.U.COBOL | SYS2.U.COBOL |
| IC.F.COBOL | SYS2.F.COBOL |
| IC.ANSI3.COBLIB | SYS2.ANSI3.COBLIB |
| IC.U.COBLIB | SYS2.U.COBLIB |
| IC.F.COBLIB | SYS2.F.COBLIB |
| IC.ANS36.COBOL | SYS2.ANS36.COBOL |
| IC.ANS36.COBLIB | SYS2.ANS36.COBLIB |

This change is due to internal system housekeeping and should be transparent to all users except those who have their own Job Control Statements with explicit references to the above mentioned old libraries. These users will have to alter their explicit references from the old libraries to the new ones.

Any questions or problems should be directed to Kin Fong at 978-4924.

Kin Fong

## CENSUS DATA

Through the auspices of the Department of Urban and Community Studies and the Department of Geography at the University of Toronto, two tapes for the Toronto CMA are now available for general use. The tapes, produced at the Institute of Behavioral Research at

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## Census Data Cont´d

York University, contain both Short and Long Form Data for the 1971 Census for all variables at the E.A. and C.T. levels. Detailed documentation outlining variables and their positions within a record are available for perusal at the following locations:

Advising Office - SF116
Technical Reference Centre - SF128
Scarborough Terminal
Arts and Science Terminal
Erindale Terminal
New Physics Terminal
Policy Analysis Terminal

Additional information necessary for accessing tapes is summarized below.

| EXT LABEL | INT LABEL | DSNAME | BLKSIZE | BPI | TAPE |
|---|---|---|---|---|---|
| F5872 | TOREA | TOREA | 5040 | 1600 | EA Tape |
| F5879 | TORCT | TORCT | 22725 | 1600 | CT Tape |

Further information regarding JCL setup can be obtained from the Computing Co-ordinators.

Len Prepas

## SPEAKEASY SESSIONS

### a. MONEY Function Working

The MONEY function of SPEAKEASY is now operative and is showing meaningful results both in batch and under TSO. This function prints information regarding job step or session cost. It is useful, for example, in examining the relative cost of different approaches to a problem.

Some users may have obtained incorrect results using an old version of the function; however, the function has now been marked ´NOT AVAILABLE AT UTCC´ and attempts to access it will generate a message to that effect.

The new version first determines whether the function is operating in batch or under TSO. In batch, the UTTIME program described in USERBOOK 3.4SUBUTILS is used and the figures printed are for the SPEAKEZ job step only. Under TSO, the TSO accounting control blocks are examined and the information provided is for the entire session. In either case, the information is only approximate (e.g. if MONEY is followed by QUIT or end-of-file, the output from MONEY will not include the overhead involved in ´deactivating´ the processor).

### b. SPEAKEASY Under EXECUTOR

UTCC has now isolated the problem which caused SPEAKEZ to fail when run under EXECUTOR. Users should soon be able to run SPEAKEZ under EXECUTOR by providing extra JCL which will result in a faster job turnaround. The default will still be to run without EXECUTOR. For further details enter DOCUMENT EXECPROB.

Suggestions or problems regarding SPEAKEASY should be directed to Ian Darwin at 978-7318.

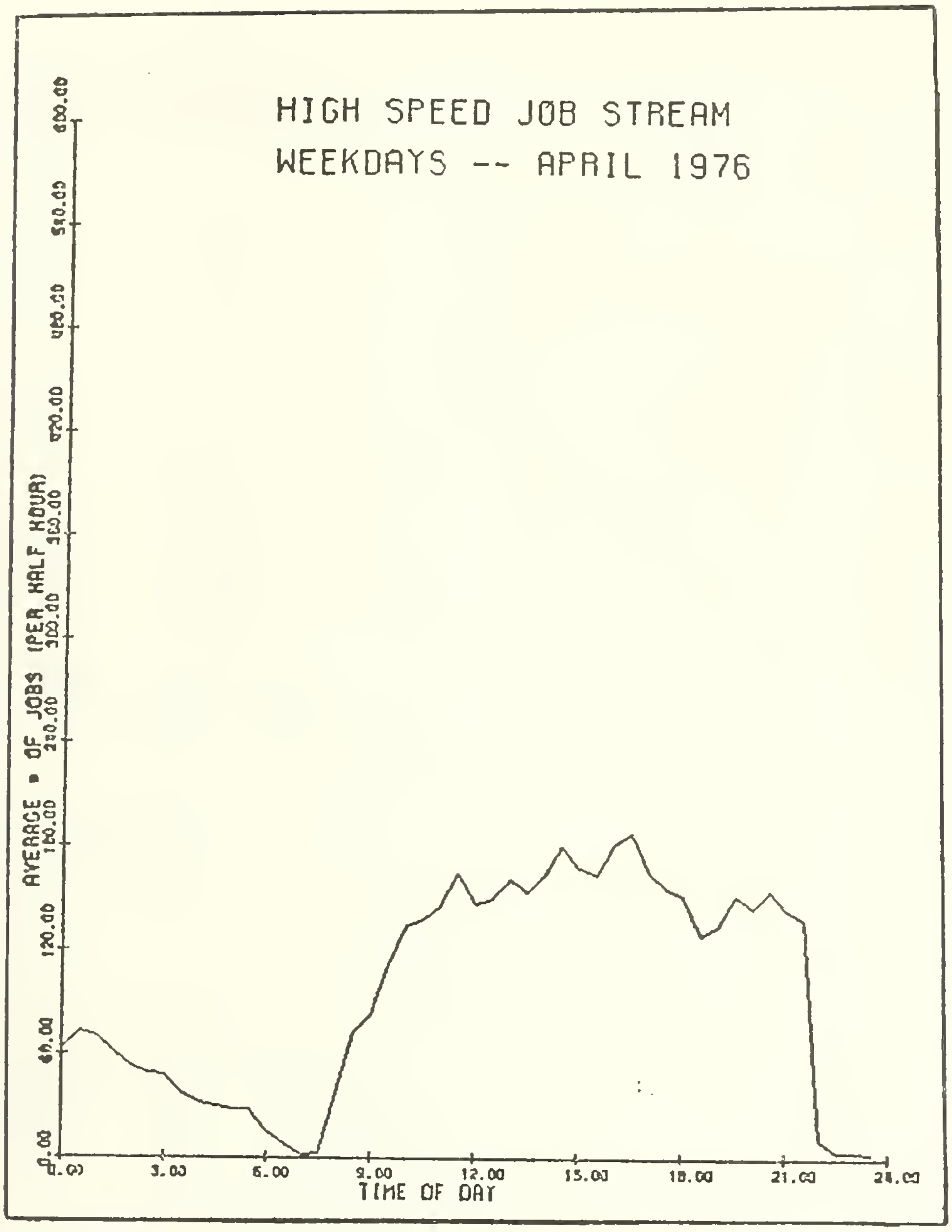
Ian Darwin

## HSJS MONTHLY STATISTICS

During the month of April 1976, 122,510 jobs were processed compared with 138,055 jobs for the previous year, a decrease of 11.6%.

The following charts summarize the HSJS activity for the month of April. The graph represents the average number of jobs processed during each half hour period of the day.

Mark Tapia



RESOURCE USAGE BY PROCESSOR

| PROCESSOR | #USES | %TOTAL | TOTAL PER PROCESSOR CPU (MIN) | TOTAL PER PROCESSOR #CARDS READ | TOTAL PER PROCESSOR #LINES PRINTED | AVERAGE PER USE CPU (MIN) | AVERAGE PER USE #CARDS READ | AVERAGE PER USE #LINES PRINTED |
|---|---|---|---|---|---|---|---|---|
| WATFIV | 57153 | (47) | 802.74 | 8537580 | 10562834 | 0.012 | 148 | 184 |
| PL/C | 35038 | (29) | 843.65 | 7897685 | 11470022 | 0.023 | 224 | 324 |
| OTHER * | 8826 | ( 7) | 149.72 | 770539 | 1569698 | 0.016 | 84 | 176 |
| SPITBOL | 7669 | ( 6) | 80.57 | 1248593 | 1974437 | 0.008 | 160 | 256 |
| UTILITY | 6225 | ( 5) | 18.79 | 891229 | 1122890 | 0.000 | 140 | 180 |
| ASMG | 4297 | ( 4) | 70.67 | 833416 | 1309375 | 0.016 | 192 | 304 |
| WATBOL | 1028 | ( 1) | 15.96 | 268224 | 309989 | 0.012 | 260 | 300 |
| ALGOLW | 872 | ( 1) | 7.55 | 105799 | 152453 | 0.008 | 120 | 172 |
| SIMON | 678 | ( 1) | 2.83 | 48807 | 53957 | 0.004 | 68 | 76 |
| LISP | 540 | ( 0) | 4.59 | 17106 | 61602 | 0.008 | 28 | 112 |
| PLUTO | 148 | ( 0) | 5.66 | 11856 | 20834 | 0.035 | 80 | 140 |
| ASSIST | 36 | ( 0) | 0.22 | 5844 | 11004 | 0.004 | 160 | 304 |
| TOTAL | 122510 | | 2002.92 | 20636678 | 28619095 | 0.016 | 168 | 233 |

* SP/K, SPSSQ and SNAP

## GPJS - SOFTWARE USAGE STATISTICS

The following chart summarizes the software usage per classified procedure and program name for the General Purpose Job Stream from April 2, 1976 to May 1, 1976.

| SOFTWARE | USES #JOBSTEPS | % |
|---|---|---|
| ALGOL | 4 | 0 |
| APLSV | 24 | 0 |
| ASM | 806 | 2 |
| COBOL | 301 | 0 |
| CSMP | 8 | 0 |
| DATATEXT | 175 | 0 |
| DBUGUTIL | 16 | 0 |
| DISKUTIL | 1,957 | 5 |
| DSUTIL | 4,790 | 13 |
| DYNAMO | 1,587 | 4 |
| FORMAC | 6 | 0 |
| FORTRAN | 9,510 | 27 |
| GPSS | 232 | 0 |
| GRAPHICS | 1,944 | 5 |
| JCLUTIL | 309 | 0 |
| LISP | 2 | 0 |
| MARKEXAM | 39 | 0 |
| MARKIV | 822 | 2 |
| MPS/MPSX | 110 | 0 |
| OSUTIL | 215 | 0 |
| PAPERTAP | 45 | 0 |
| PL/I | 4,636 | 13 |
| RPG | 117 | 0 |
| SAS | 22 | 0 |
| SERVAID | 292 | 0 |
| SNOBOL | 1,184 | 3 |
| SORTMERG | 1,183 | 3 |
| SPEAKEZ | 164 | 0 |
| SPSS | 2,659 | 7 |
| SSP/BMDD | 567 | 1 |
| TAPEUTIL | 480 | 1 |
| TIPRS | 59 | 0 |
| TSO | 44 | 0 |
| XFR | 274 | 0 |
| TOTAL | 34,583 | |

Kin Fong

## S/370-165-II RELIABILITY

The reliability statistics for April indicate an uptime percentage of 99.3 while the average number of unscheduled IPL's per day reached 0.52. The number of scheduled hours of production for April totalled 484.

### MONTHLY COMPARATIVE FIGURES

| MONTH | % UPTIME | UNSCHED. IPLs/DAY |
|---|---|---|
| Jan/75 | 95.7 | 2.77 |
| Feb/75 | 96.0 | 1.14 |
| Mar/75 | 96.7 | 1.10 |
| Apr/75 | 98.6 | 0.70 |
| May/75 | 99.4 | 0.60 |
| Jun/75 | 97.4 | 0.79 |
| Jul/75 | 95.2 | 1.23 |
| Aug/75 | 97.6 | 0.83 |
| Sep/75 | 99.1 | 0.87 |
| Oct/75 | 97.2 | 1.13 |
| Nov/75 | 95.8 | 1.63 |
| Dec/75 | 99.4 | 0.48 |
| Jan/76 | 99.1 | 0.43 |
| Feb/76 | 98.9 | 0.97 |
| Mar/76 | 96.8 | 1.03 |
| Apr/76 | 99.3 | 0.52 |

The percentage breakdown for total system downtime for April was:

HARDWARE: 40 minutes (19.6%)
SOFTWARE: 77 minutes (37.7%)
OTHER : 87 minutes (42.7%)

The major events contributing to these downtime totals were as follows:

April 6 - 32 minutes down - 2 IPLs

a. 25 minutes attributed to an "0E2" wait state after the TSO regions had abnormally terminated.

b. 7 minutes due to a HASP catastrophic error.

April 7 - 60 minutes down - 1 IPL

a. All time charged to an air-conditioning failure which caused a "THERMAL CHECK" on the S/370-165-II CPU.

April 14 - 37 minutes down - 1 IPL

a. All time attributed to the VTOC being damaged in USER01 while attempting to free space on the volume.

Paul Scarborough

```
                         DOWNTIME REPORT ON   S/370   FOR APR 76

-----------------------------------------------------------------------------------------------------------------------------
|                                                    REIPLS(FREQ) // DOWNTIME (MN)                                           |
|  DAY  REIPL   DNTIME 0    5   10   15   20   25   30   35   40   45   50   55   60   65   70   75   80   85   90   95  100|
=======================+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+----+|
| T  1      1       9  |□********
| F  2      0       0  |
| S  3      0       0  |
| S  4      1      10  |□*********
| M  5      1      15  |□**************
| T  6      2      32  |□□******************************
| W  7      1      60  |□***********************************************************
| T  8      0       0  |
| F  9      0       0  |
| S 10      0       0  |
| S 11      0       0  |
| M 12      1       5  |□****
| T 13      2      10  |□□********
| W 14      1      37  |□************************************
| T 15      0       0  |
| F 16 (CENTER CLOSED) |
| S 17      0       0  |
| S 18      0       0  |
| M 19      1       6  |□*****
| T 20      0       0  |
| W 21      0       0  |
| T 22      0       0  |
| F 23      0       0  |
| S 24      0       0  |
| S 25      0       0  |
| M 26      0       0  |
| T 27      0       0  |
| W 28      2      12  |□□**********
| T 29      1       5  |□****
| F 30      1       3  |□**
-----------------------------------------------------------------------------------------------------------------------------


LEGEND       : ONE □  =ONE UNSCHED. IPL
               ONE *  =ONE MINUTE OF DOWNTIME



               TOTAL SCHEDULED HOURS OF PRODUCTION :  484
               TOTAL DOWNTIME (MN)   :   204 , AVG/DAY :    7.03 , AVG/PROD HOUR :    0.20
               TOTAL UNSCHED. IPL'S :    15 , AVG/DAY  :    0.52
               DOWNTIME RATE IS      :  0.70 PERCENT OF SCHEDULED PRODUCTION HOURS
```

## INTERACTIVE SYSTEMS RELIABILITY

There was an inordinate amount of downtime during April which can be directly attributed to the numerous hardware problems that were experienced during the month. The uptimes achieved for the month of April for each of APL and ATS were 96.76% and 94.89% of scheduled operation respectively. The number of scheduled hours of operation for the month of April totalled 471, while the number of unscheduled IPL´s per day was 0.17. In addition to the scheduled time, Interactive Services were also available for approximately 90 hours of unattended weekend operation. The percentage breakdown of total system downtime for April was: HARDWARE - 713 (85.39%); OTHER - 122 (14.61%). 5 unscheduled IPL´s were required as a result of the failures. The major events contributing to downtime were as follows:

April 5: a. Daily backups overlapped into normal production hours due to tape drive malfunction.

b. A total of 99 minutes of downtime was attributed to power up problems with the processor storage and LCS during power fluctuation.

April 6: Processor storage encountered an unexpected machine check due to read only storage (ROS) check.

April 7: 299 minutes of downtime were attributed to numerous storage checks which were dropping bits in storage frame 3. A defective array was isolated and successfully replaced in the 2365.

April 11/12: Software difficulties were encountered when adding another disk to ATS permanent storage resulted in an excessive amount of downtime for ATS. In addition, the operator was unable to restore documents from previous backup tapes resulting in the loss of Friday´s and Saturday´s storage reports for all ATS users. UTCC sincerely regrets any inconvenience caused to the user community.

April 15: 375 minutes of downtime were attributed to channel data checks in the 2870 multiplexor channel. A major portion of the downtime was required by the IBM customer engineer to trace and correct the cause of the channel problem.

The following table summarizes the time lost out of scheduled hours of production due to system failures for each of the systems.

Kam Jain

| DATE | DOWNTIME (mins) | | REASON |
|---|---|---|---|
| | APL | ATS | |
| Thu April 1 | 5 | 5 | IPL clock set incorrectly (OPERATIONAL) |
| Mon April 5 | 16 | 90 | Backups overlapped into production hours. (HARDWARE) |
| " | 99 | 99 | *Storage and LCS power up problems (OTHER) |
| Tue April 6 | 22 | 22 | *ROS parity check (HARDWARE) |
| Wed April 7 | 299 | 299 | Storage checks in frame 3 (HARDWARE) |
| Sun April 11 | - | 340 | Problems in restoring perm storage. (SOFTWARE) |
| Mon April 12 | - | 180 | " |
| Tue April 13 | 15 | 15 | IPL clock set incorrectly (OPERATIONAL) |
| " | 3 | 3 | Thermal check on 2365 -replaced cooling fan (HARDWARE) |
| Thu April 15 | 375 | 375 | *Channel data checks-multi plexor channel. (HARDWARE) |
| Mon April 26 | 45 | - | APL abended on SOF3 due to machine check (HARDWARE) |
| Tue April 27 | 37 | 17 | *Machine check followed by core image failure (HARDWARE) |
| TOTAL | 916 | 1445 | *IPL required |

## APL PRINT TRAIN

During the past few months several APL users have inquired about the possibility of obtaining an APL print train for Interactive Services. In attempting to evaluate this proposition, a brief questionnaire has been drawn up. Your efforts in completing and returning this self-addressed questionnaire would be greatly appreciated.

1. (a) Would you make use of an APL print train?

   YES ( ) NO ( )

   (b) If YES, which print train would you rather have?

   APLFAST (APL characters only)
   YES ( ) NO ( )

   APLFULL (APL plus modified TN or lower case characters)

   YES ( ) NO ( )

   (c) Would you be willing to pay a surcharge towards the print cost?

   YES ( ) NO ( )

2. Which application would require the use of an APL print train?

   (a) Documentation of public and private libraries.

   YES ( ) NO ( )

   (b) Computer assisted instruction.

   YES ( ) NO ( )

   (c) List APL and APLSV workspaces.

   YES ( ) NO ( )

   (d) Other, please specify:

   ______________________________________

   ______________________________________

   ______________________________________

Kam Jain

----------fold----------fold----------fold----------fold----------fold

Interactive Services
Room 333
McLennan Labs
60 St. George Street
TORONTO, Ontario
Attention: Kam Jain

## UTCC COMPUTER EQUIPMENT

### SYSTEM/370 MODEL 165-II

- located in SF103/105/112
- provides General Purpose Job Stream, High Speed Job Stream, APL SV and TSO services
- 3072K bytes of memory
- 1 drum (2301)
- 16 disk drives (3330)
- 8 disk drives (2314)
- 7 magnetic tape drives (5 9-track and 2 7-track)
- 6 display consoles
- 6 printers
- 5 card readers
- 1 card punch
- 8 remote batch terminals
- 1 paper tape reader
- Calcomp plotters (11" and 30")
- Gould plotter (11")
- OS/MVT with HASP

### SYSTEM/360 MODEL 65

- located in McLennan Physical Laboratories
- provides APL and ATS services
- 1536K bytes of core
- 26 disk drives (2314)
- 3 9-track magnetic tape drives
- 1 printer
- 1 card reader
- 1 card punch
- 140 typewriter terminals
- OS/MVT with APL and ATS

### COMPUTER RESEARCH FACILITY

- located in SF207
- DEC GT44 Systems with
  - 1 PDP-11/40 CPU
  - 2 9-track dual density tape drives
  - 1 1000 cpm card reader
  - VT17 graphics display unit
  - 1 lab. peripheral system with A/D & D/A
  - 1 CVI 260 Video Bandwidth Compressor
- DEC GT40 System with
  - 1 PDP-11/10 CPU
  - 1 2314 tape disk drive
  - 1 VT12 graphic display unit
  - 9-track/800 BPI tape drive
  - 1 Calcomp microfilm plotter

## UTCC DIRECTORY

| | ROOM | PHONE 978- |
|---|---|---|
| **DIRECTOR** | | |
| John C. Wilson | SRS218 | 2206 |
| **ASSOCIATE DIRECTOR** | | |
| Al Heyworth | SF214C | 4936 |
| **ADMINISTRATION MANAGER** | | |
| Dave Scobie | SF143 | 8948 |
| **INFORMATION OFFICE** | | |
| General Inquiries<br>Don Gibson | SF128<br>SF128A | 4990 or 4991 |
| **MANAGER, SERVICES** | | |
| Stan Yagi | SG200 | 7331 |
| **MANAGER, MARKETING AND CONTRACT PROGRAMMING SERVICES** | | |
| Dave Scobie | SF143 | 8948 |
| **COMPUTING CO-ORDINATORS** | | |
| Sandford Fleming Terminal | | |
| Mark Tapia | SF125 | 7109 |
| Program Advisors | SF117 | 8599 |
| Erindale | | |
| Clem DiPlacido | | 828-5311 |
| Scarborough | | |
| Raymond Shen | | 284-3173 |
| Arts and Science | | |
| Dave Tritchler | SS2104 | 6509 |
| New Physics | | |
| John Roth | NP1202 | 8823 |
| **SUPERVISOR, APPLICATIONS SUPPORT** | | |
| Herb Kugel | SG304 | 7286 |
| **MANAGER, OPERATIONS** | | |
| Derry Cox | SF113 | 7092 |
| **SUPERVISORS, OPERATIONS** | | |
| Paul Scarborough (S/370-165-II) | SF114 | 6220 |
| Kam Jain (S/360-65) | NP333 | 7374 |
| Dave Wong (S/370-155) | | 6864 |
| **MANAGER, SYSTEMS** | | |
| Rein Mikkor | SF116 | 5058 |
| **SYSTEM HARDWARE SUPERVISOR** | | |
| Eugene Siciunas | SF113 | 4967 |
| **MANAGER, COMPUTER RESEARCH FACILITY** | | |
| Dennis Smith | SF214B | 4800 |
| **LAB CO-ORDINATOR (CRF)** | | |
| Krishna Patnaik | SF207 | 4086 |
| **ACCOUNTS** | | |
| Ann DeFazio | SF139 | 7148 |
| Wynona Bardgett | SF139 | 8702 |
| **ACCESS CODES** | | |
| Yvonne Bowen | SF139 | 8703 |
| **ASSISTANT MANAGER, INFORMATION SYSTEMS TERMINAL** | | |
| George Milo | | 5040 |

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**NOTE:**

SF = Sandford Fleming
SG = 49 St. George
NP = McLennan Physical (New Physics)
SS = Sydney Smith
SRS= Student Record Services

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### JOB AND SYSTEM STATUS QUERIES

| | |
|---|---|
| SYSTEM/370, TSO | 7373 |
| ATS/APL | 6234 |
| 2741 TERMINAL MALFUNCTIONS | 7107 |
| 029 KEYPUNCH MALFUNCTIONS | 6465 |

### SERVICES

| | DIAL-UP | ADVICE |
|---|---|---|
| APL - 2741 | 7200 | 6710 |
| APL(ASCII) | 7200 | 6710 |
| APL SV - 2741 | 7239 | 6710 |
| APL SV - TTY | 7447 | 6710 |
| ATS | 7100 | 7107 |
| TSO - 2741 | 7303 | 8599 |
| TSO - TTY (10 cps) | 7390 | 8599 |
| TSO - TTY (30 cps) | 7386 | 8599 |
| DATATALK | 6710 | 6710 |

UNIVERSITY OF TORONTO
COMPUTER CENTRE,
TORONTO, CANADA,